

Curriculum vitae

27 mai 2008

Petru MIRONESCU

Associated Professor

Institut Camille Jordan UMR 5208

Université de Lyon, Université Claude Bernard Lyon 1

Address : Institut Camille Jordan, Université Lyon 1, 43, boulevard du 11 novembre 1918, 69622

Villeurbanne, bât. Braconnier, bureau 210

E-mail : mironescu@math.univ-lyon1.fr

Carreer, diploma

2004- : Associated Professor, Claude Bernard Lyon 1 University.

January 2001 : Habilitation à diriger les recherches

Title : "Some analysis questions related to the Ginzburg-Landau equation"

1996-2004 : Assistant Professor, Paris Sud (Orsay) University.

1994-1996 : Teaching Assistant, Pierre et Marie Curie (Paris 6) University.

May 1995 : PhD Defense, Pierre et Marie Curie (Paris 6) University.

Supervisor : Haïm Brezis

Title : "Some problems related to Ginzburg-Landau vorticity"

1992-1995 : PhD, Pierre et Marie Curie (Paris 6) University.

1990-1993 : Teaching Assistant, Bucharest University.

1989-1990 : Highschool teacher, Roman.

1984-1989 : Student, Bucharest University.

Administrative charges

1996-2000 : Member of the hiring committee, Pierre et Marie Curie (Paris 6) University.

2004-2006 : Organizer of the PDE seminar, Claude Bernard Lyon 1 University.

2004- 2007 : In charge with the library, Claude Bernard Lyon 1 University.

2005-2006 : Member of the hiring committee, Claude Bernard Lyon 1 University.

2007- : Member of the hiring committee, École Normale Supérieure, Lyon.

2007- : In charge with the Master Program "Mathématiques et Applications, Ingénierie Mathématique", Lyon (joint program of all the research and teaching institutions in Lyon).

Teaching, supervision

Recent courses :

Linear and semilinear elliptic equations (graduate course) ;

Analysis course for Agrégation ;

Introduction to PDEs (fourth year course) ;

Integration, Topology, Optimisation (third year).

Intensive graduate course, "Fine properties of functions : an introduction", Școala Normală Superioară, Bucharest (2005).

I supervised six research projects (four fifth year, two fourth year).

Joint with Francis Clarke, I supervised the thesis of Pierre Bousquet, recently hired as Assistant Professor at the Aix-Marseille I University.

I currently supervise a thesis. Starting september 2008, I will jointly supervise a thesis in Algeria.

Conferences, invited talks

Courant Institute, Chicago University, Princeton University, Rutgers University, Collège de France Seminar, first french-american colloquium, Technion Institute (Haïfa), National Center for Theoretical Sciences (Taiwan), Academia Sinica (Taiwan), Leiden University, Milan University, Isaac Newton Institute (Cambridge), conference in honor of H. Brezis and F. Browder, Rome I University, conference in honor of J. Serrin, Université Catholique (Louvain-la-Neuve), École Normale Supérieure (Lyon), Grenoble University, Tours University, Institutul de Matematică al Academiei Române (Bucharest), European Conference on Elliptic and Parabolic Equations (in honor of Haïm Brezis).

Conference and intensive course at the International Center for Theoretical Physics (Trieste).

Forthcoming talks : fifth international conference on differential and functional differential equations (Moscow), series of lectures at the Tlemcen University (Algeria), conference "La taifas cu diaspora romaneasca" (Bucharest).

Publications

1. P. Mironescu, V. Rădulescu, *A bifurcation problem associated to a convex, asymptotically linear function*, C. R. Acad. Sci. Paris **316** (1993), 667-672.
2. P. Mironescu, L. Panaitopol, *On the existence of a triangle with prescribed bisector lengths*, Amer. Math. Monthly **101** (1994), 58-60.
3. P. Mironescu, V. Rădulescu, *Periodic solutions of the equation $-\Delta u = u(1 - |u|^2)$ in \mathbb{R} and \mathbb{R}^2* , Houston J. of Mathematics **20** (1994), 635-669.
4. H. Brezis, P. Mironescu, *Sur une conjecture de E. De Giorgi relative à l'énergie de Ginzburg-Landau*, C. R. Acad. Sci. Paris **319** (1994), 167-170.
5. P. Mironescu, *Une estimation pour les minimiseurs de l'énergie de Ginzburg-Landau*, C. R. Acad. Sci. Paris **319** (1994), 941-943.
6. M. Comte, P. Mironescu, *Étude d'un minimiseur de l'énergie de Ginzburg-Landau près de ses zéros*, C. R. Acad. Sci. Paris **320** (1995), 289-293.
7. P. Mironescu, *On the stability of radial solutions of the Ginzburg-Landau equation*, J. Funct. Anal. **130** (1995), 334-344.
8. P. Mironescu, V. Rădulescu, *A Multiplicity Theorem for Locally Lipschitz Periodic Functionals*, J. Math. Anal. Appl. **195** (1995), 621-637.
9. M. Comte, P. Mironescu, *Sur quelques propriétés des minimiseurs de l'énergie de Ginzburg-*

- Landau, C. R. Acad. Sci. Paris **320** (1995), 1323-1326.
- 10.** P. Mironescu, *Explicit bounds for solutions to a Ginzburg- Landau type equation*, Rev. Roumaine Math. Pures Appl. **41** (1996), 263-271.
- 11.** M. Comte, P. Mironescu, *The behavior of a Ginzburg- Landau minimizer near its zeroes*, Calc. Variations PDE **4** (1996), 323-340.
- 12.** P. Mironescu, V. Rădulescu, *The study of a bifurcation problem associated to a convex, asymptotically linear function*, Nonlinear Anal. TMA **26** (1996), 857-875.
- 13.** M. Comte, P. Mironescu, *Remarks on non-minimizing solutions of a Ginzburg- Landau type equation*, Asymptotic Analysis **13** (1996), 199-215.
- 14.** P. Mironescu, *Les minimiseurs locaux pour l'équation de Ginzburg- Landau sont à symétrie radiale*, C. R. Acad. Sci. Paris **323** (1996), 593-598.
- 15.** M. Comte, P. Mironescu, *A Bifurcation Analysis for the Ginzburg- Landau equation*, Arch. Rational Mech. Analysis **144** (1998), 301-311.
- 16.** M. Comte, P. Mironescu, *Minimizing properties of arbitrary solutions to the Ginzburg- Landau equation*, Proc. Royal Soc. Edinburgh **129A** (1999), 1157-1169.
- 17.** L. Lassoued, P. Mironescu, *Ginzburg- Landau type energy with discontinuous constraint*, Journal d'Analyse **77** (1999), 1-26.
- 18.** H. Brezis, Y. Y. Li, P. Mironescu, L. Nirenberg, *Degree and Sobolev spaces*, Topol. Meth. in Nonlin. Anal. **13** (1999), 181-190.
- 19.** M. Comte, A. Haraux, P. Mironescu, *Multiplicity and stability topics in semilinear parabolic equations*, Differential and Integral Equations **13** (2000), 801-811.
- 20.** J. Bourgain, H. Brezis, P. Mironescu, *Lifting in Sobolev spaces*, Journal d'Analyse **80** (2000), 37-86.
- 21.** J. Bourgain, H. Brezis, P. Mironescu, *On the structure of the Sobolev space $H^{1/2}$ with values into the circle*, C. R. Acad. Sci. Paris **331** (2000), 119-124.
- 22.** J. Bourgain, H. Brezis, P. Mironescu, *Another look at Sobolev spaces*, in *Optimal Control and Partial Differential Equations, In honour of Professor Alain Bensoussan's 60th Birthday*, J. L. Menaldi, E. Rofman, A. Sulem (eds), IOS Press, Amsterdam, 2001, 439-455.
- 23.** H. Brezis, P. Mironescu, *Composition in fractional Sobolev spaces*, Discrete and Continuous Dynamical Systems **7** (2001), 241-246.
- 24.** H. Brezis, P. Mironescu, *Gagliardo-Nirenberg, composition and products in fractional Sobolev spaces*, Journal of Evolution Equations **1** (2001) (dedicated to Tosio Kato), 387-404.
- 25.** H. Brezis, P. Mironescu, *On some questions of topology for S^1 -valued fractional Sobolev spaces*, Rev. R. Acad. Cien., Serie A Mat. **95** (2001), 121-143.
- 26.** J. Bourgain, H. Brezis, P. Mironescu, *Limiting embedding theorems for $W^{1-\varepsilon,p}(\mathbb{R}^n)$* , Journal d'Analyse **87** (2002), 77-101.
- 27.** L. Berlyand, P. Mironescu, *Ginzburg-Landau minimizers with prescribed degrees : dependence on domain*, C. Rendus Acad. Sci. Paris, **337** (2003), 375-380.
- 28.** J. Bourgain, H. Brezis, P. Mironescu, *$H^{1/2}$ maps with values into the circle : minimal connections, lifting, and the Ginzburg-Landau equation*, Publ. Math. Inst. Hautes Études Sci, **99** (2004), 1-115.
- 29.** P. Mironescu, A. Pisante, *A variational problem with lack of compactness for $H^{1/2}(S^1; S^1)$ maps of prescribed degree*, J. Funct. Anal. **217** (2004), 249-279.
- 30.** P. Mironescu, *On some properties of S^1 -valued fractional Sobolev spaces*, in *Noncompact problems at the intersection of analysis, geometry, and topology*, Contemporary Mathematics series, AMS, **350**, 2004, 201-207.
- 31.** H. Brezis, P. Mironescu, A. Ponce, *$W^{1,1}$ -maps with values into S^1* , in *Geometric Analysis of PDE and Several Complex Variables*, (S. Chanillo, P. Cordaro, N. Hanges, J. Hounie and A. Meziani, eds.), Contemporary Mathematics series, AMS **368**, 2005, 69-100. A followup of this

paper is available online on my web page <http://igd.univ-lyon1.fr/mironescu/P2.htm>.

32. J. Bourgain, H. Brezis, P. Mironescu, *Lifting, Degree and Distributional Jacobian Revisited*, Comm. Pure Appl. Math., 58 (2005), 529-551.

33. L. Berlyand, P. Mironescu, *Ginzburg-Landau minimizers with prescribed degrees. Capacity of the domain and emergence of vortices*, J. Funct. Anal. 239 (2006), 76-99. An extended version of this paper is available online on my web page <http://igd.univ-lyon1.fr/mironescu/P2.htm>.

34. P. Mironescu, *Sobolev maps on manifolds : degree, approximation, lifting*, in Perspectives in Nonlinear Partial Differential Equations, In honor of Haïm Brezis (H. Berestycki, M. Bertsch, F. Browder, L. Nirenberg, L. A. Peletier, L. Véron eds.), Contemporary mathematics 446, Amer. Math. Society, 2007, 413-436.

35. L. Berlyand, P. Mironescu, *Two-parameter homogenization for a Ginzburg-Landau problem in a perforated domain*, to appear in Networks and Heterogeneous Media.

Selected papers

1. J. Bourgain, H. Brezis, P. Mironescu, *$H^{1/2}$ maps with values into the circle : minimal connections, lifting, and the Ginzburg-Landau equation*, Publ. Math. Inst. Hautes Études Sci, 99 (2004), 1-115.

2. J. Bourgain, H. Brezis, P. Mironescu, *Lifting, Degree and Distributional Jacobian Revisited*, Comm. Pure Appl. Math., 58 (2005), 529-551.

3. P. Mironescu, *Les minimiseurs locaux pour l'équation de Ginzburg-Landau sont à symétrie radiale*, C. R. Acad. Sci. Paris 323 (1996), 593-598.

4. J. Bourgain, H. Brezis, P. Mironescu, *Lifting in Sobolev spaces*, Journal d'Analyse 80 (2000), 37-86.

5. L. Berlyand, P. Mironescu, *Ginzburg-Landau minimizers with prescribed degrees. Capacity of the domain and emergence of vortices*, J. Funct. Anal. 239 (2006), 76-99. An extended version of this paper is available online on my web page <http://igd.univ-lyon1.fr/mironescu/P2.htm>.